GA-7A8DRL

AMD Socket 940 Dual Processor Motherboard

USER'S MANUAL

AMD Opteron™ Socket 940 Dual Processor Motherboard
Rev. 1001
12ME-7A8DRL-1001

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Item Checklist

- ☑ The GA-7A8DRL motherboard
- ☑ PATA Cable x 2
- ☑ CD for motherboard driver & utility
- ☑ GA-7A8DRL user's manual
- ☑ Quick Reference Guide x 1
- ☑ GC-MADS4 Card
- ☑ FDD Cable x 1
- ☑ I/O shield x 1
- ☑ SCSI cable x 1

WARNING!

Computer motherboards and expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Hold components by the edges and try not touch the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.
5. Ensure that the ATX power supply is switched off before you plug in or remove the ATX power connector on the motherboard.

Installing the motherboard to the chassis...

If the motherboard has mounting holes, but they don't line up with the holes on the base and there are no slots to attach the spacers, do not become alarmed you can still attach the spacers to the mounting holes. Just cut the bottom portion of the spacers (the spacer may be a little hard to cut off, so be careful of your hands). In this way you can still attach the motherboard to the base without worrying about short circuits. Sometimes you may need to use the plastic springs to isolate the screw from the motherboard PCB surface, because the circuit wire may be near by the hole. Be careful, don't let the screw contact any printed circuit write or parts on the PCB that are near the fixing hole, otherwise it may damage the board or cause board malfunctioning.

Chapter 1 Introduction

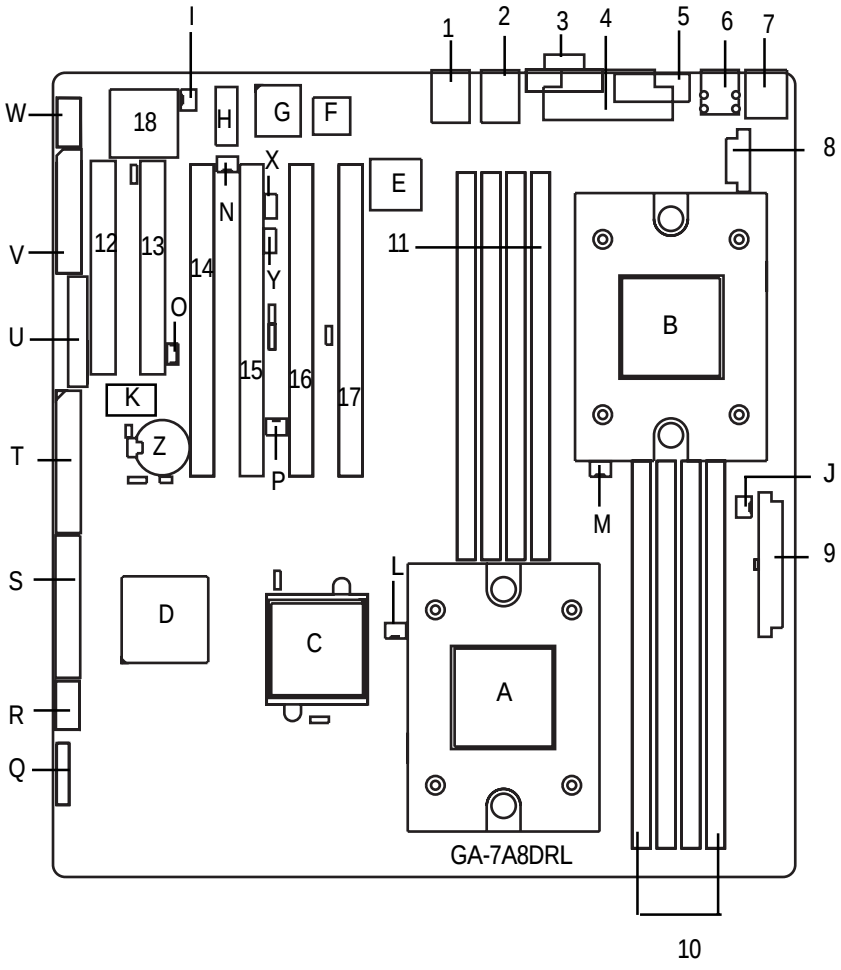
Summary of Features

Form Factor	• 30.4cm x 26.9cm ATX size form factor, 6 layers PCB.
Motherboard	• GA-7A8DRL Motherboard
CPU	• Support Dual Opteron processors (Sledge Hammer) • The HyperTransport link of the AMD Opteron processor is capable of operating at 400, 800, 1200, and 1600 MT/s.
Chipset	• AMD-8131 North Bridge HyperTransport PCI-X chipset provides two independent, high-performance PCI-X bus bridges, interated with a high-speed HyperTransport technology tunnel. • AMD-8111 HyperTransport I/O Hub replaces the traditional southbridge. This component integrates storage, connectivity, audio, I/O expansion and system management functions into a single device.
Memory	• Supports 4 * DDR socket slots for Primary CPU • Supports 4 * DDR socket slots for Secondary CPU • CPU1 supports memory capacity up to 8GB • CPU2 supports memory capacity up to 16GB • Supports registered ECC and DDR200/266/333/400
I/O Control	• ITE IT8712F Super I/O
SATA RAID (via SO-DIMM daughter card)	• Adaptec AIC-8130 controller • Supports RAID 0,1 • Supports 4 SATA Connectors
Expansion Slots	• Supports 2 x PCI 32Bit/ 33Mhz Slots • Supports 2 x PCI-X 64Bit/100MHz Slots • Supports 2 x PCI-X 64Bit/66MHz Slots • Supports 1 x PCI-X 64Bit/66MHz Slot by SO-DIMM(SCSI card)
On-Board Peripherals	• 1 Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M and 2.88M bytes. • 1 Parallel port supports Normal/EPP/ECP mode • 1 Serial ports (COMA) • 1 VGA connector • 2 USB ports (USB1.1)

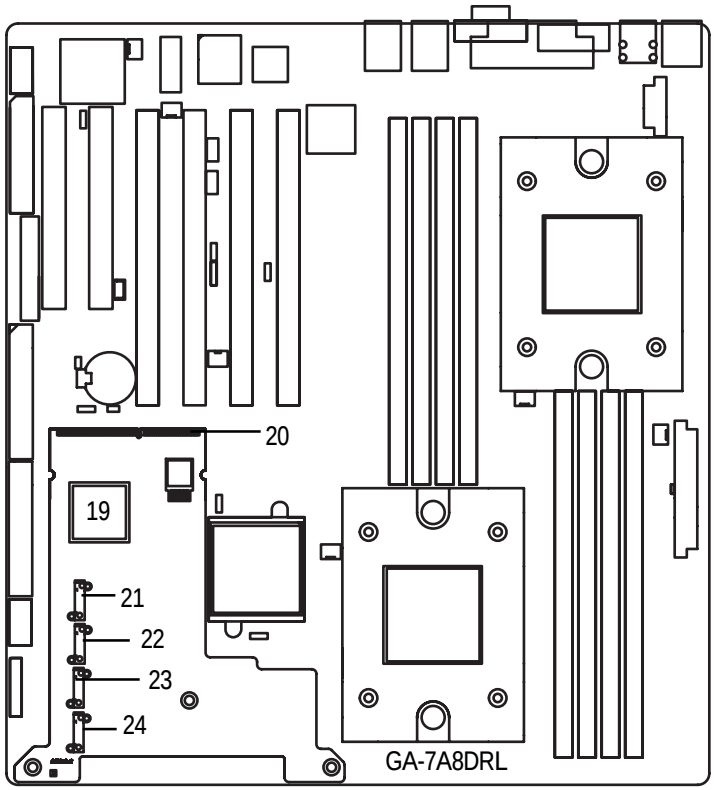
Hardware Monitor	•	Winbond W83791D
	•	CPU/System Fan Revolution detect
	•	CPU/System temperature detect
	•	System Voltage Detect
	•	Power Management Support
Power Managerment Features	•	Wake-on-LAN (WOL), USB, PCI, mouse
	•	Supports ACPI S1/S4/S5 functions
On-Board VGA	•	Build in ATI Rage XL with 8M SDRAM on board
On-Board LAN	•	Intel 82545GM
	•	Intel 82541GI
PS/2 Connector	•	PS/2 Keyboard interface and PS/2 Mouse interface
BIOS	•	Phoenix BIOS on 4Mb flash RAM
Additional Features	•	SMBus Support
	•	IOAPIC Support
	•	Serial IRQ Support
	•	AC Recovery

Please set the CPU host frequency in accordance with your processor's specifications. We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether your system can run under these specific bus frequencies properly will depend on your hardware configurations, including CPU, Chipsets,SDRAM,Cards….etc.

GA-7A8DRL Motherboard Layout



GA-7A8DRL Motherboard Layout (With ZCR)



A.	CPU1	1.	GLAN2
B.	CPU2	2.	GLAN1
C.	AMD8131	3.	VGA1
D.	AMD8111	4.	LPT1
E.	Intel 845GM	5.	COMA1
F.	Intel 82541GI	6.	USB3
G.	BIOS	7.	KB_MS (Keyboard/Mouse)
H.	EM638325TS-6	8.	ATX2 (SSI power connector)
I.	PWR_FAN2 (Power Fan)	9.	ATX1 (SSI power connector)
J.	PWR_FAN1 (Power Fan)	10.	CPU1 DIMM 0~3
K.	ITE8712	11.	CPU2 DIMM 0~3
L.	CPU_FAN1 (CPU Fan)	12.	PCI_6
M.	CPU_FAN2 (CPU Fan)	13.	PCI_5
N.	SYS_FAN1 (System Fan)	14.	PCI-X_4
O.	WOL	15.	PCI-X_3
P.	WOM	16.	PCI-X_2
Q.	Front Panel1	17.	PCI-X_1
R.	USB1 (Front USB)	18.	ATI_Rage XL
S.	IDE2	19.	Adaptec AIC-8130
T.	IDE1	20	ZCR_CON (ZCR Connector)
U.	GSMI (IPMI)	21.	SATA0
V.	FDD1 (Floppy Connector)	22.	SATA1
W.	COMB	23.	SATA2
X.	IPMB1	24.	SATA3
Y.	IPMB2		
Z.	BAT1 (Battery)		

Chapter 2 Hardware Installation Process

To set up your computer, you must complete the following steps:

Step 1- Install the Central Processing Unit (CPU)

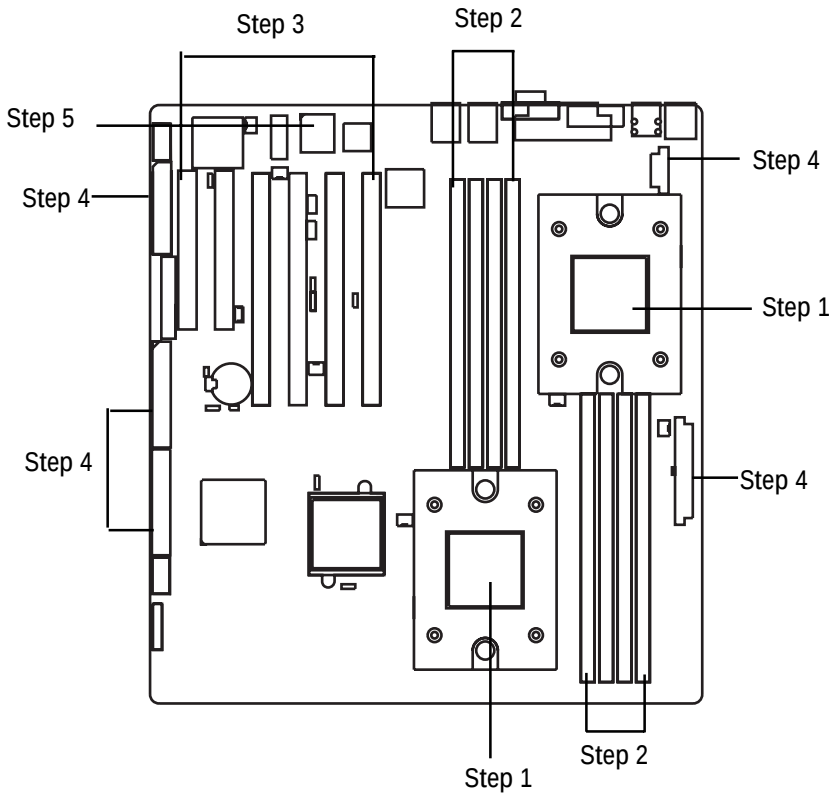
Step 2- Install memory modules

Step 3- Install expansion cards

Step 4- Connect ribbon cables, cabinet wires, and power supply

Step 5- Setup BIOS software

Step 6- Install supporting software tools



Step 1: Installing Processor and CPU Cooling Fan

Before installing the processor and cooling fan, adhere to the following cautions:

CAUTION

1. The processor will overheat without the heatsink and/or fan, resulting in permanent irreparable damage.
2. Never force the processor into the socket.
3. Apply thermal grease on the processor before placing cooling fan.
4. Please make sure the CPU type is supported by the motherboard.
5. If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation. Please use AMD approved cooling fan.

Step1-1: Installing CPU

Step 1. Rise the lever bar on the socket.

Step 2. Aligning the pins of the processor with the socket, insert the processor into the socket.

Step 3 Close the lever completely.

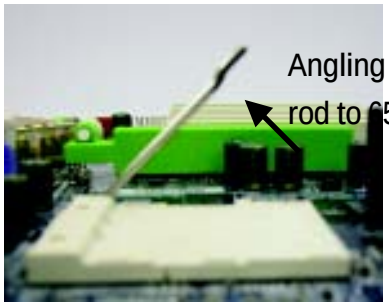


Figure 1. Angling the rod to 65-degree maybe feel a kind of tight , and then continue pull the rod to 90-degree when a noise “cough” made.

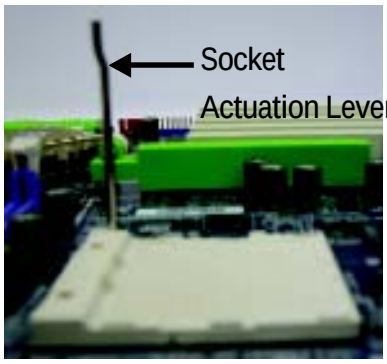


Figure 2. Pull the rod to the 90-degree directly.

Figure 3. A1 pin location on the Socket and Processor.Move the socket lever to the locked position while holding pressure on the center of the processor.

Step 4. When the processor installation is completed, apply thermal grease to the processor(as shown in Figure 4) prior to installing the heatsink. AMD recommends using a high thermal conductivity grease for the thermal interface material rather than a phase change material. Phase change materials develop strong adhesive forces between the heatsink and processor.

Removing the heatsink under such conditions can cause the processor to be removed from the socket without moving the socket lever to the unlocked position and then damage the processor pins or socket contacts.

** We recommend you to apply the thermal tape to provide better heat conduction between your CPU and heatsink. (The CPU cooling fan might stick to the CPU due to the hardening of the thermal paste. During this condition if you try to remove the cooling fan, you might pull the processor out of the CPU socket alone with the cooling fan, and might damage the processor. To avoid this from happening, we suggest you to either use thermal tape instead of thermal paste, or remove the cooling fan with extreme caution.)

iFigure 4. Application of Thermal Grease to the processor.

Step1-2: Installing Cooling Fan

Step 1. Attach th cooling fan clip to the processor scoket. Align the heatsink assembly with the support frame mating with the backer plate standoffs as shown in Figure 5&6.

Step 2. Coonect the processor fan cable to the processor fan connector.

Note: ** We recommend you to buy the kind of cooling fan which is shown in Figure 8. This type of cooling fan will provide the best performance for heat releasing.

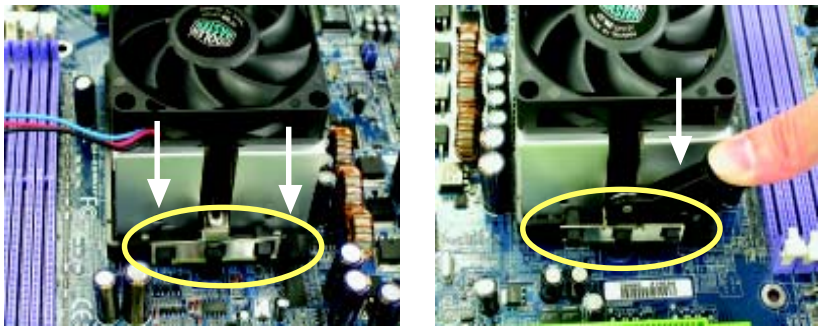


Figure 5&6 Alignment of Heatsink Assembly with Standoffs

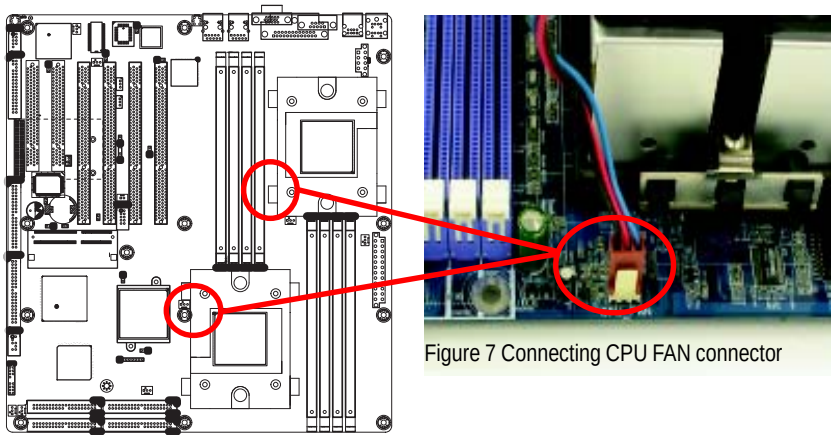


Figure 7 Connecting CPU FAN connector

Figure 8. Recommended cooling fan

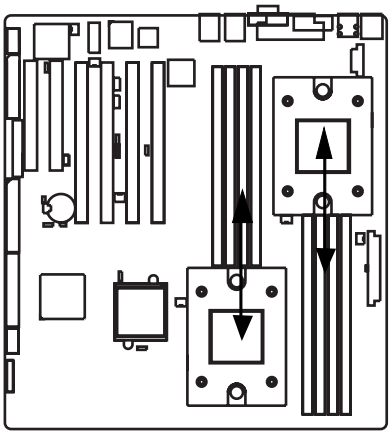


Figure 9. Air Flow direction

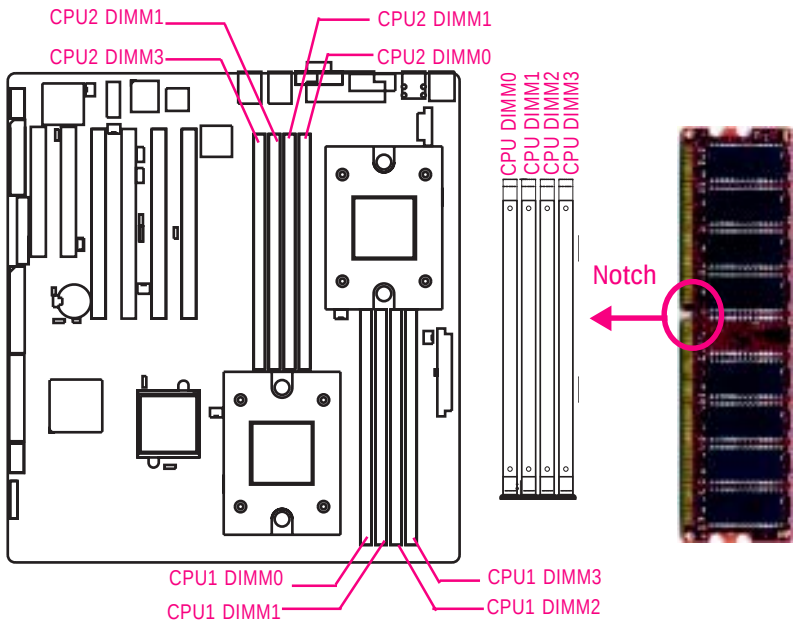
Step 2: Install memory modules

CAUTION

Before installing the processor and heatsink, adhere to the following warning:

Please note that the DIMM module can only fit in one direction due to the one notches. Wrong orientation will cause improper installation. Please change the insert orientation.

The motherboard has 8 dual inline memory module (DIMM) sockets. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM socket . Memory size can vary between sockets.

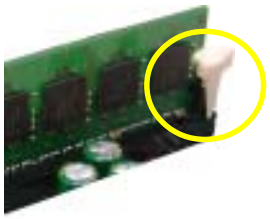


Total Memory Sizes With Registered DDR DIMM

Devices used on DIMM	1 DIMMx64/x72	2 DIMMsx64/x72	3 DIMMsx64/x72	4 DIMMsx64/x72
64 Mbit (4Mx4x4 banks)	256 MBytes	512 MBytes	768 MBytes	1 GBytes
64 Mbit (2Mx8x4 banks)	128 MBytes	256 MBytes	384 MBytes	512 MBytes
64 Mbit (1Mx16x4 banks)	64 MBytes	128 MBytes	192 MBytes	256 MBytes
128 Mbit(8Mx4x4 banks)	512 MBytes	1 GBytes	1.5 GBytes	2 GBytes
128 Mbit(4Mx8x4 banks)	256 MBytes	512 MBytes	768 MBytes	1 GBytes
128 Mbit(2Mx16x4 banks)	128 MBytes	256 MBytes	384 MBytes	512 MBytes
256 Mbit(16Mx4x4 banks)	1 GBytes	2 GBytes	3 GBytes	4 GBytes
256 Mbit(8Mx8x4 banks)	512 MBytes	1 GBytes	1.5 GBytes	2 GBytes
256 Mbit(4Mx16x4 banks)	256 MBytes	512 MBytes	768 MBytes	1 GBytes
512 Mbit(32Mx4x4 banks)	2 GBytes	4 GBytes	4 GBytes	4 GBytes
512 Mbit(16Mx8x4 banks)	1 GBytes	2 GBytes	3 GBytes	4 GBytes
512 Mbit(8Mx16x4 banks)	512 MBytes	1 GBytes	1.5 GBytes	2 GBytes

Installation Step:

1. Unlock a DIMM socket by pressing the retaining clips outwards.
2. Aling a DIMM on the socket such that the notch on the DIMM exactly match the notches in the socket.
3. Firmly insert the DIMMinto the socket until the retaining clips snap back in place.
4. The processor supports 64-bit mode and 128-bit mode configuration of the DIMMs. In 64 bit mode, only DIMM 0 and 2 can be populated. Possible combinations of DIMMs in 64 bit mode are listed in Table 1. In 128 bit mode, minimum of two DIMMs is required to create the 128 bit bus; therefore, DIMMs can only be populated in even numbered pairs in slot 0 & 1, and 2& 3. Each logical DIMM must be madeof two identical DIMMs having the same device size on each and the same DIMM size. Regardless of mode, DIMM must be populated in order starting at the farest slotfrom the processor. Table 2 & 3 shows the possible combination of DIMMs for 128 mode. Not all possbile combinations are listed in the tables.
5. Installed DIMMs must be the same speed and must all be registered. For a list of suuported memrory, please refer to the table list above.
6. Reverse the installation steps when you wish to remove the DIMM module.



Locked Retaining Clip

Table 1. Vaild DIMM Configuration for 64 bit Mode

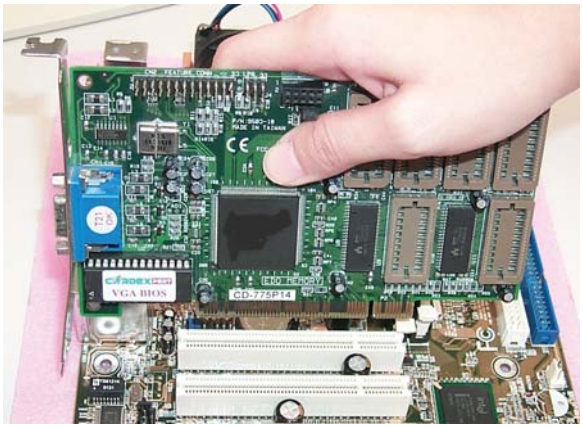
DIMM 0 (MB)	DIMM 2 (MB)
X	256
256	256
X	512
512	512
X	1024
1024	1024
X	2048
2048	2048
X	4096
4096	4096
Note: X = Do not populate	

Table 2. Vaild DIMM Configuration for 128 bit Mode

Logical DIMM 0		Ligical DIMM1	
DIMM 0 (MB)	DIMM 1 (MB)	DIMM 2 (MB)	DIMM 3 (MB)
X	X	256	256
256	256	256	256
X	X	512	512
512	512	512	512
X	X	1024	1024
1024	1024	1024	1024
X	X	2048	2048
2048	2048	2048	2048
X	X	4096	4096
4096	4096	4096	4096
Note: X = Do Not populate			

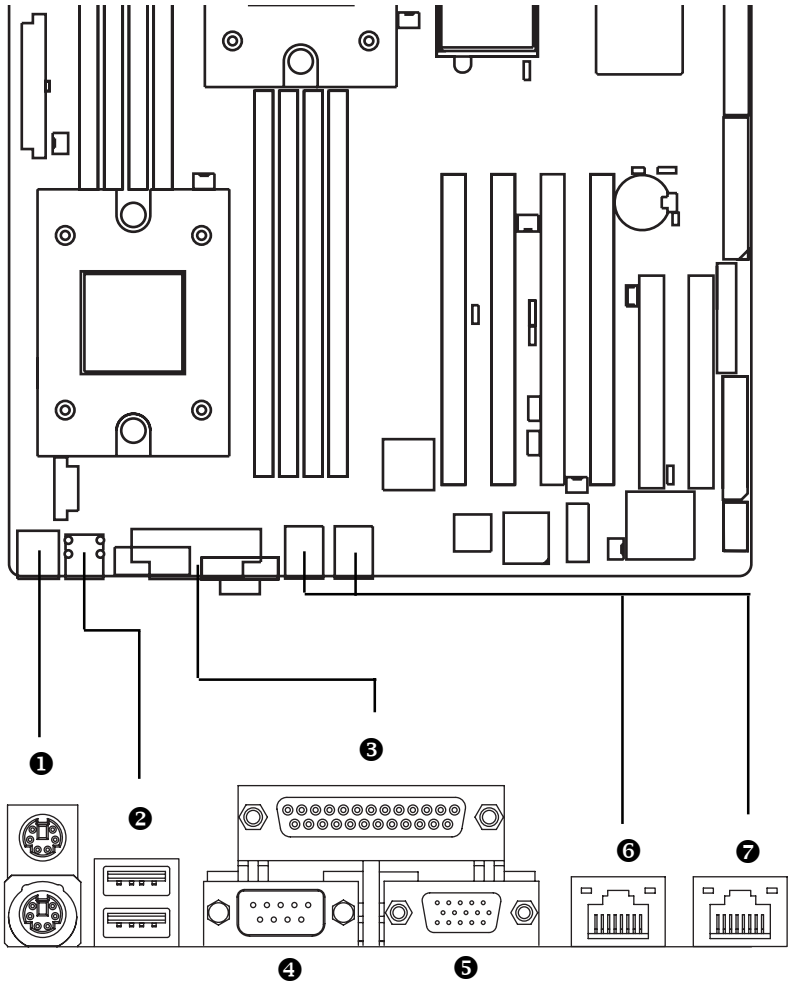
Step 3: Install expansion cards

1. Read the related expansion card's instruction document before install the expansion card into the computer.
2. Remove your computer's chassis cover, screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on the card are indeed seated in the slot.
5. Replace the screw to secure the slot bracket of the expansion card.
6. Replace your computer's chassis cover.
7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
8. Install related driver from the operating system.



Step 4: Connect ribbon cables, cabinet wires, and power supply

Step4-1:I/O Back Panel Introduction



❶ PS/2 Keyboard and PS/2 Mouse Connector

To install a PS/2 port keyboard and mouse, plug the mouse to the upper port (green) and the keyboard to the lower port (purple).

❷ USB Port

Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker...etc. have a standard USB interface.
Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible patch or driver updated. For more information please contact your OS or device(s) vendors.

❸/❹/❺ Parallel Port / Serial Port / VGA Port

This connector supports 1 standard COM port and 1 Parallel port. Device like printer can be connected to Parallel port ; mouse and modem etc can be connected to Serial port.

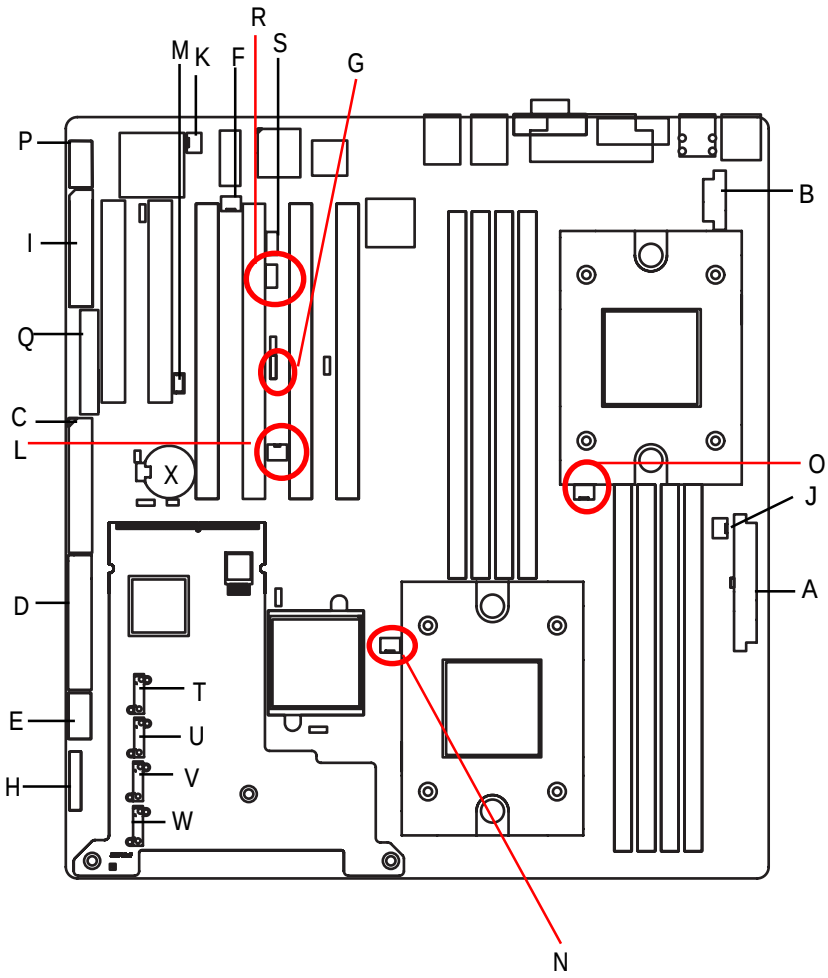
❻/❼ LAN Port

The provided Internet connection is Gigabit Ethernet, providing data transfer speeds of 10/100/1000Mbps.

LAN LED Description

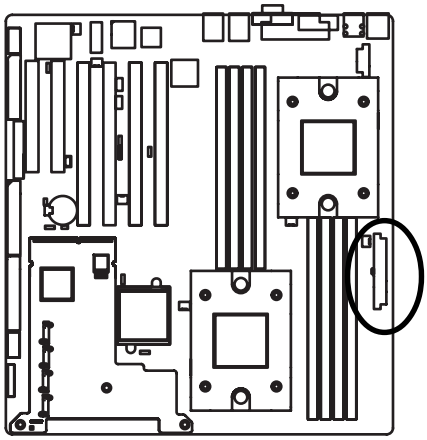
Name	Color	Condition	Description
LAN Link/Activity	Green	ON	LAN Link / no Access
	Green	BLINK	LAN Access
10/100 LAN Speed	-	OFF	Idle
	Green	ON	100Mbps connection
GbE LAN Speed	-	OFF	10Mbps connection
	Yellow	ON	1Gbps connection
	Yellow	BLINK	Port identification with 1Gbps connection
	Green	ON	100Mbps connection
	Green connection	BLINK	Port identification with 10 or 100Mbps
	-	OFF	10Mbps connection

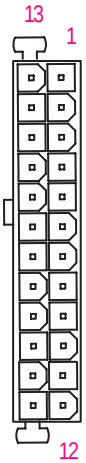
Step4-2: Connectors Introduction



A) AXT1	M) WOL1
B) ATX2	N) CPU_FAN1
C) IDE1	O) CPU_FAN2
D) IDE2	P) COMB
E) USB1	Q) GSMI1
F) SYS_FAN1	R) IPMB1
G) SMBUS1	S) IPMB2
H) F_Panel	T) SATA0
I) FDD1	U) SATA1
J) PWR_FAN1	V) SATA2
K) PWR_FAN2	W) SATA3
L) WOM1	X) BAT (Battery)

A) ATX1

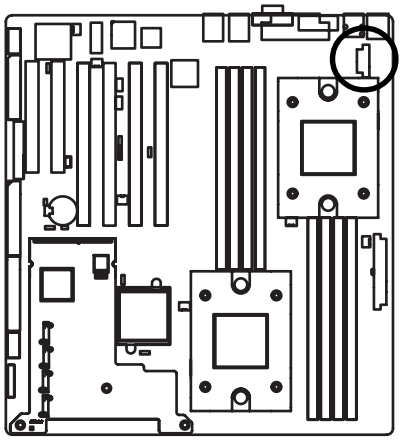


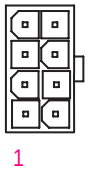


PIN No.	Definition
1	+3.3V
2	+3.3V
3	GND
4	+5V
5	GND
6	+5V
7	GND
8	POK
9	5VSB
10	+12V
11	+12V
12	+3.3V
13	+3.3V
14	-12V
15	GND
16	PSON
17	GND
18	GND
19	GND
20	-5V
21	+5V
22	+5V
23	+5V
24	GND

➢ AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.

B) ATX2



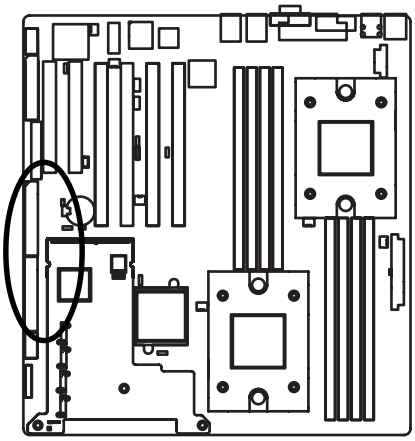


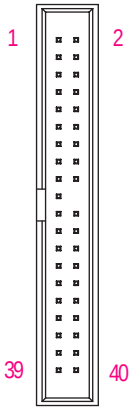
Pin No.	Definition
1	GND
2	+12v
3	GND
4	+12V
5	GND
6	+12V
7	GND
8	+12V

➢This connector (ATX +12V) is used only for CPU Core Voltage.

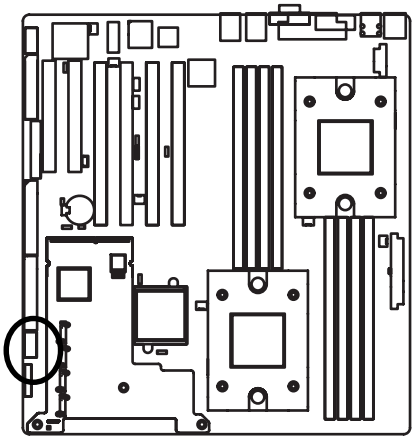
C / D) IDE 1/2

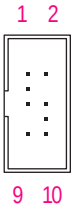
Please connect first harddisk to IDE1 and connect CDROM to IDE2. The red stripe of the ribbon cable must be the same side with the Pin1.





E) USB1

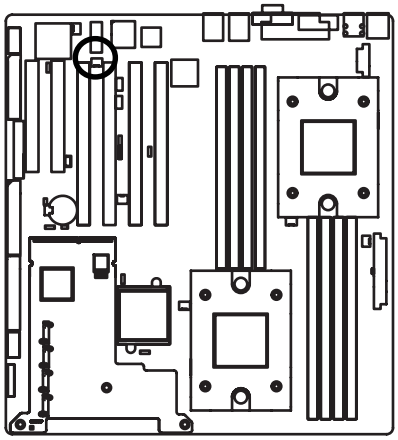




PIN No.	Definition
1	VCC
2	GND
3	-Data 0
4	Key
5	+Data 0
6	+Data 1
7	Key
8	-Data 1
9	GND
10	VCC

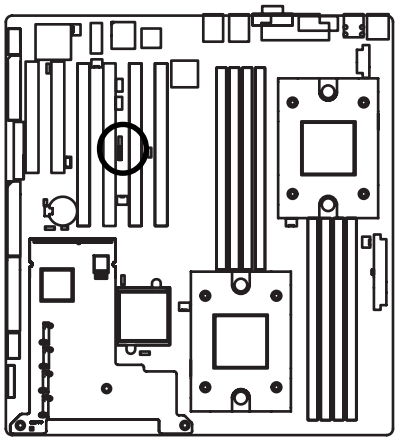
- Be careful with the polarity of the front panel USB connector. Check the pin assignment while you connect the front panel USB cable. Please contact your nearest dealer for optional front panel USB cable.

F) SYS_FAN1 (System FAN)



Pin No.	Definition
1	GND
2	+12V
3	Sense

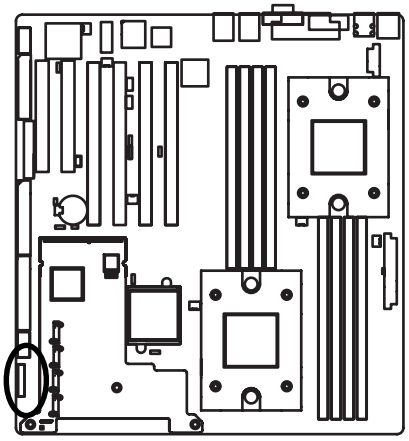
G) SMBUS1 (SMBus Connector)

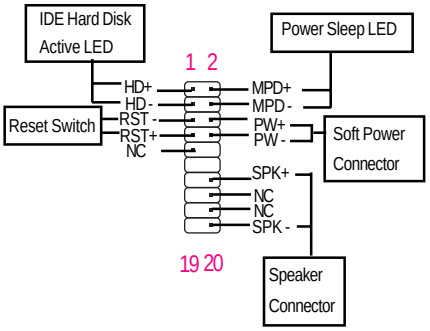


Pin No.	Definition
1	GND
2	KEY
3	Data
4	Clock

H) F_Panel1 (2X10 Pins)

Please connect the power LED, PC speaker, reset switch and power switch etc of your chassis front panel to the front panel jumper according to the pin assignment below.

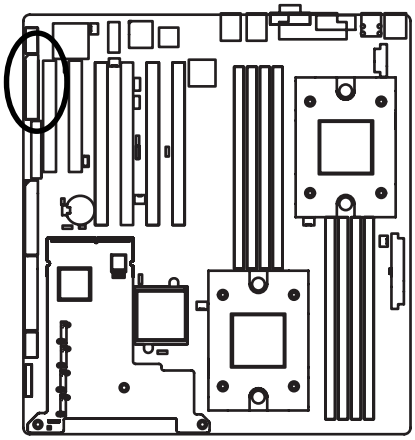


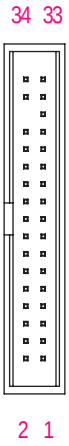


Pin No	Signal Name	Description
1	HD+	Hard Disk LED pull up (330 ohm)
2	MPD+	Pull up 330 ohm
3	HD-	Hard Disk Active LED Signal
4	MPD-	Suspend LED (Blinking)
5	RST-	Ground
6	PW+	Front Panel Power On/Off Button Signal
7	RST+	Ground
8	PW-	Front Panel Power On/Off Button Signal(GND)
9	NC	No Connect
10	KEY	KEY
11	KEY	KEY
12	KEY	KEY
13	KEY	KEY
14	SPK+	Speaker connector (5V Standby)
15	KEY	KEY
16	NC	No Connect
17	KEY	KEY
18	NC	No Connect
19	KEY	KEY
20	Speaker-	Speaker connector

I) FDD1 (Floppy Connector)

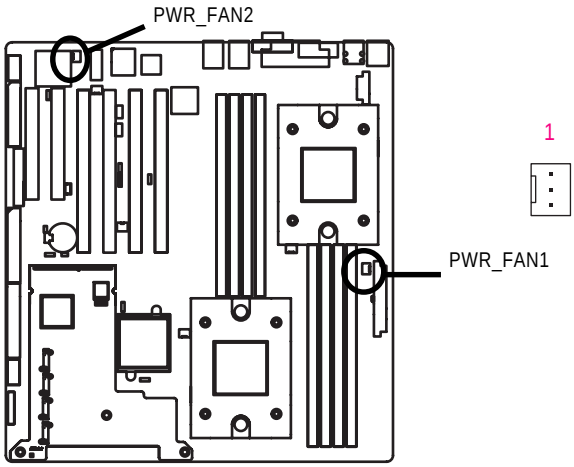
Please connect the floppy drive ribbon cables to FDD. It supports 360K,720K,1.2M,1.44M and 2.88Mbytes floppy disk types. The red stripe of the ribbon cable must be the same side with the Pin1.





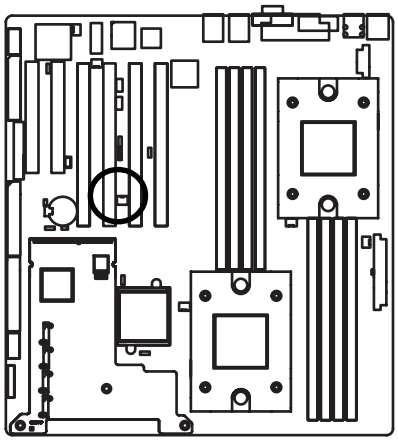
J / K) PWR_FAN1/2 (Power Fan Connectors)

This connector allows you to link with the cooling fan on the system case to lower the system temperature.



Pin No.	Definition
1	GND
2	+12V
3	Sense

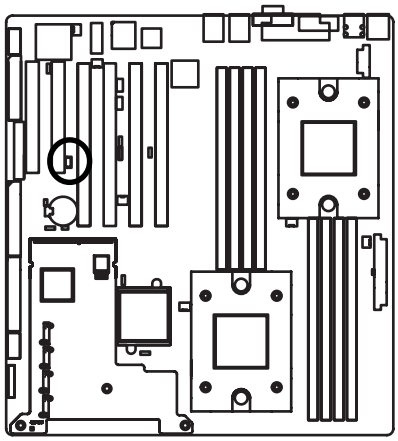
L) WOM1 (Wake on Moderm Connector)



Pin No.	Definition
1	Ring
2	GND

M) WOL1 (Wake On LAN Connector)

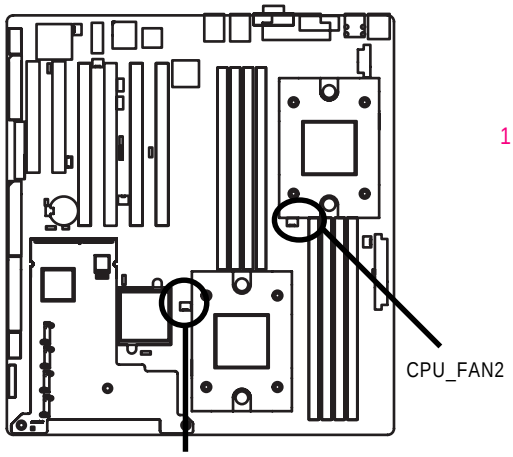
This connector allows the remove servers to manage the system that installed this mainboard via your network adapter which also supports WOL.



Pin No.	Definition
1	+5V SB
2	GND
3	Signal

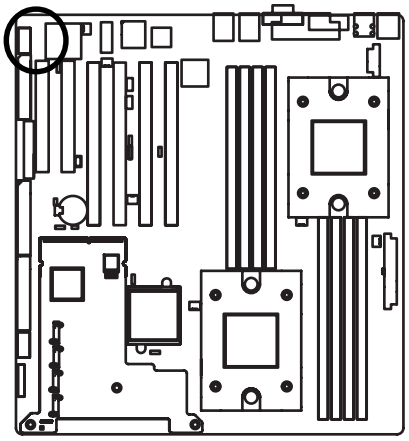
N / O) CPU_FAN 1/2 (CPU Fan Connectors)

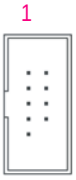
Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating.The CPU fan connector supports Max. current up to 600 mA.



Pin No.	Definition
1	GND
2	+12V
3	Sense

P) COMB

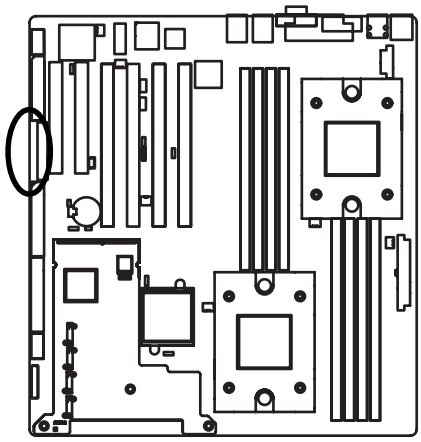




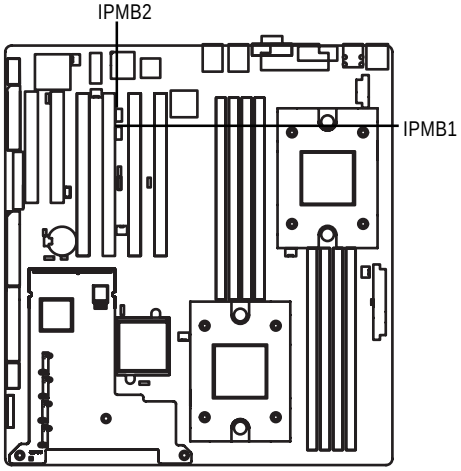
Pin No.	Definition
1	NDCDB
2	NSINB
3	NSOUTB
4	NDTRB
5	GND
6	NDSRB-
7	NRTSB-
8	NCTSB-
9	NRIB-
10	NC

Q) GSMI1

This connector is for the IPMI function and must bundle with IPMI module.



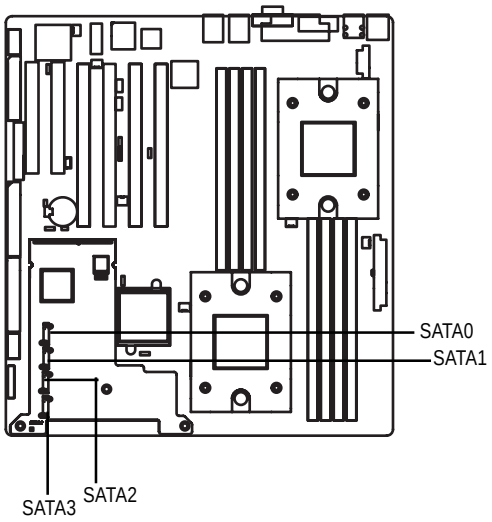
R / S) IPMB1/2 (IPMB Connectors)



Pin No.	Definition
1	Serial Clock
2	GND
3	Serial Data

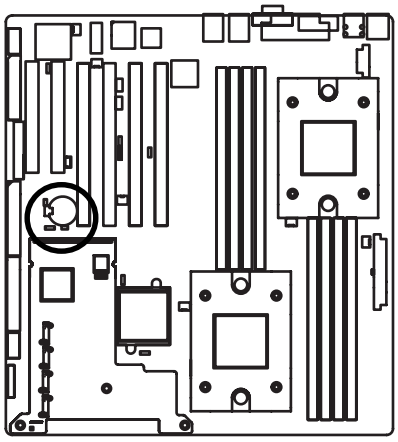
T / U/ V / W) SATA 0/1/2/3 (Serial ATA Connectors)

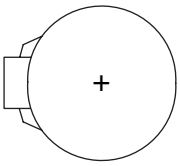
You can connect the Serial ATA device to this connector, it provides you high speed transfer rates (150MB/sec).



Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

X) BAT (Battery)



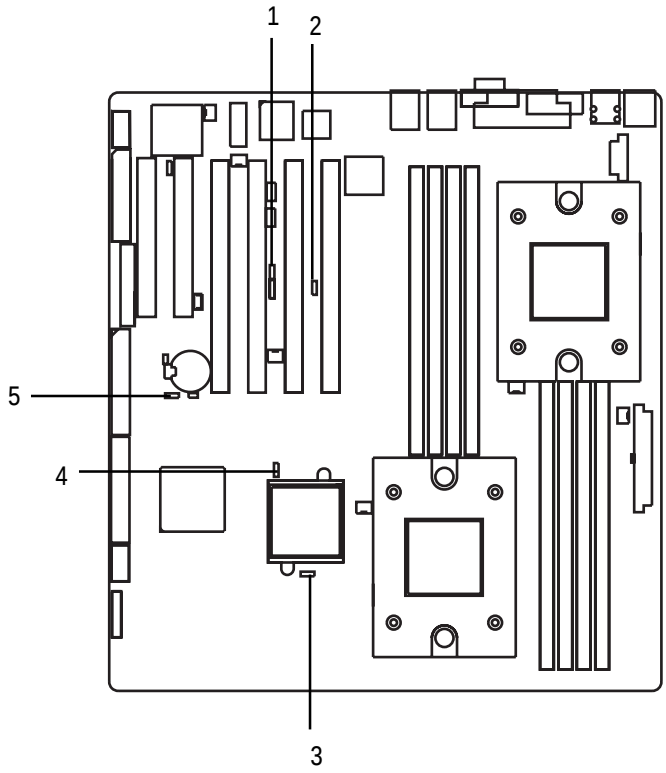


If you want to erase CMOS...
1.Turn OFF the computer and unplug the power cord.
2.Remove the battery, wait for 30 second.
3.Re-install the battery.
4.Plug the power cord and turn ON the computer.

CAUTION

- Danger of explosion if battery is incorrectly replaced.
- Replace only with the same or equivalent type recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

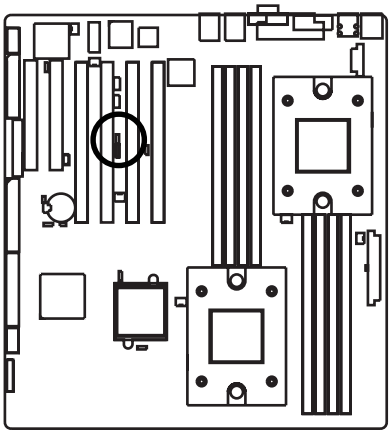
Step4-3: Jumper Setting Introduction



1) JP1	4) JP7
2) JP2	5) CLR_CMOS1 (Clear CMOS)
3) JP4	

	PCI-X 66MHz	PCI-X 100MHz	PCI-X 133MHz
PCI-X 1.2	JP2 PIN2-3 short	JP2 PIN1-2 short	JP2 PIN1-2 short
82545GM		JP7 PIN1-2 short	JP7 PIN2-3 short
PCI-X 3.4	JP1 PIN2-3 short	JP1 PIN1-2 short	JP1 PIN1-2 short
SCSI 7902		JP4 PIN1-2 short	JP4 PIN2-3 short

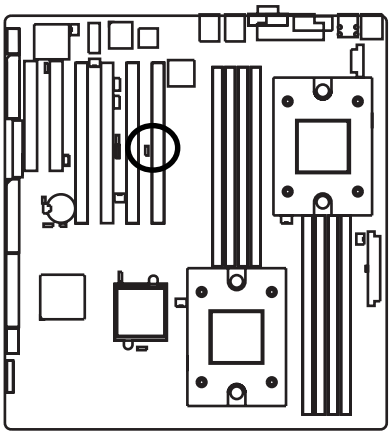
1) JP1 (PCI-X Bus Speedy Function)



1 1-2 close: Enable PCI-X 3 & 4 and SCSI 100/133 Mhz (default)

1 2-3 close: Enable PCI-X 3 & 4 and SCSI 66Mhz

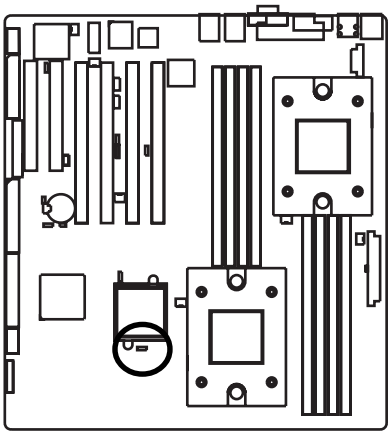
2) JP2 (PCI-X Bus Speedy Function)



1 1-2 close: Enable PCI-X 1 & 2 and 545GM 100/133 Mhz (default)

1 2-3 close: Enable PCI-X 1 & 2 and 545GM 66Mhz

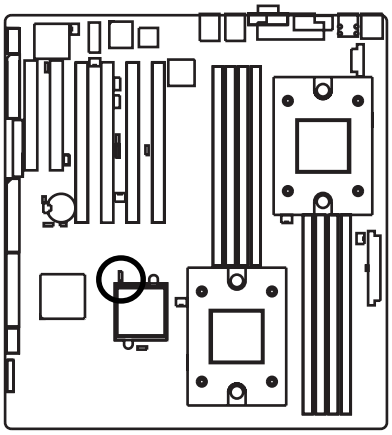
3) JP4 (PCI-X Bus Speedy Function)



1  1-2 close: Enable PCI-X 3 & 4 and SCSI at 100 Mhz (default)

1  2-3 close: Enable PCI-X 3 & 4 and SCSI at 133 Mhz

4) JP7 (PCI-X Bus Speedy Function)



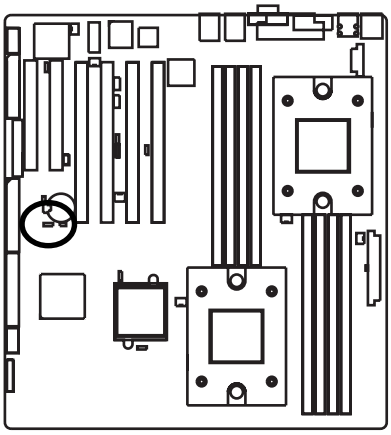
1  1-2 close: Enable PCI-X 1&2 and 545GM 100 Mhz (default)

1  2-3 close:Enable PCI-X 1 & 2 and 545GM 133 Mhz

5) CLR_CMOS1 (Clear CMOS Function)

You may clear the CMOS data to its default values by this jumper.

Default value doesn't include the "Shunter" to prevent from improper use this jumper. To clear CMOS, temporarily short 1-2 pin.



1  1-2 close: Clear CMOS

1  2-3 close: Normal (Default)

** Recommendation frequency setting and slot:

Mode	Frequency	Maximum slots or devices (on board)
PCI-X	133	1
PCI-X	100	2
PCI-X	66	3
PCI	66	3

Chapter 3 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERINGSETUP

Power ON the computer and press <F2> immediately will allow you to enter Setup.

CONTROLKEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Reserved
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Reserved
<F7>	Load the Optimized Defaults
<F8>	Reserved
<F9>	Reserved
<F10>	Save all the CMOS changes, only for Main Menu

GETTINGHELP

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

- **Main**

  This setup page includes all the items in standard compatible BIOS.

- **Advanced**

  This setup page includes all the items of AMI special enhanced features.

  (ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)

- **Security**

  Change, set, or disable password. It allows you to limit access the system and setup.

- **Boot**

  This setup page include all the items of first boot function features.

- **Exit**

  There are five optionsin this selection: Exit Saving Changes, Exit Discarding Changes, Load Optimal Defaults, Load Failsafe Defaults, and Discard Changes.

Main

Once you enter Phoenix BIOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

PhoenixBIOS Setup Utility				
Main	Advanced	Security	Boot	Exit
System Time:			[00:13:12]	Item Specific Help
System Date:			[01/26/2003]	
Lagecy Diskette A			[1.44MB 3 1/2]	
▸ Primary Master			[80026MB]	
▸ Primary Slave			[None]	
▸ Secondary Master			[CD-ROM]	
▸ Secondary Slave			[None]	
Large Disk Access Mode			[DOS]	
▸ System Information				
F1: Help	↑↓: Select Item		+ -: Change Values	F9: Setup Defaults
Esc: Exit	←→: Select Menu		Enter: Select ▸ Sub-Menu	F10: Save&Exit

Figure 1: Main

☞ System Time

The time is calculated based on the 24-hour military time clock. Set the System Time (HH:MM:SS)

☞ System Date

Set the System Date. Note that the "Day" automatically changed after you set the date.
(Weekend: DD: MM: YY) (YY: 1099~2099)

Legacy Diskette A

This category identifies the type of floppy disk drive A that has been installed in the computer.

Disabled	Disable this device.
360KB, $5^{1/4}$ in.	$3^{1/2}$ inch AT-type high-density drive; 360K byte capacity
1.2MB, $3^{1/2}$ in.	$3^{1/2}$ inch AT-type high-density drive; 1.2M byte capacity
720K, $3^{1/2}$ in.	$3^{1/2}$ inch double-sided drive; 720K byte capacity
1.44M, $3^{1/2}$ in.	$3^{1/2}$ inch double-sided drive; 1.44M byte capacity.
2.88M, $3^{1/2}$ in.	$3^{1/2}$ inch double-sided drive; 2.88M byte capacity.

Note: The 1.25MB,$3^{1/2}$ reference a 1024 byte/sector Japanese media format. The 1.25MB,$3^{1/2}$ diskette requires 3-Mode floppy-disk drive.

IDE Primary Master, Slave / Secondary Master, Slave

The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and manual type. Manual type is user-definable; Auto type which will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

- TYPE

1-39: Predefined types.

Users: Set parameters by User.

Auto: Set parameters automatically. (Default Vaules)

CD-ROM: Use for ATAPI CD-ROM drives or double click [Auto] to set all HDD parameters automatically.

ATAPI Removable: Removable disk drive is installed here.

- Multi-Sector Transfer

This field displays the information of Multi-Sector Transfer Mode.

Disabled: The data transfer from and to the device occurs one sector at a time.

Auto: The data transfer from and to the device occurs multiple sectors at a time if the device supports it.

- Maximum Capacity

This field displays the maximum capacity of primary IDE master.

LBA Mode	This field shows if the device type in the specific IDE channel support LBA Mode.
32-Bit I/O	Enable this function to max imize the IDE data transfer rate.
Transfer Mode	This field shows the information of Teansfer Mode.
Ultra DMA Mode	This filed displays the DMA mode of the device in the specific IDE channel.

Large Dis k Acces s Mode

If you are using UNIX, Novell Netw are or other operating system, then select [Other]. If youare installing a new software and the device fails, change this selection agian. Different operating sy stem require different representation of device geometries.

DOS	Select DOS as Large Disk Access Mode.
Other	Select Other as Large Disk Access Mode.

System Information

- System Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640 K for sy stems with 640K or more memory installed on the motherboard.

- Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1 MB in the C PU's memory address map.

- BIOS Version

This field display s the information of BIOS v ersion.

Advanced

About This Section: Advanced

With this section, allowing user to configure your system for basic operation. User can change the system's default boot-up sequence, keyboard operation, chipset configuration, PCI configuration and System Hardware health monitoring.

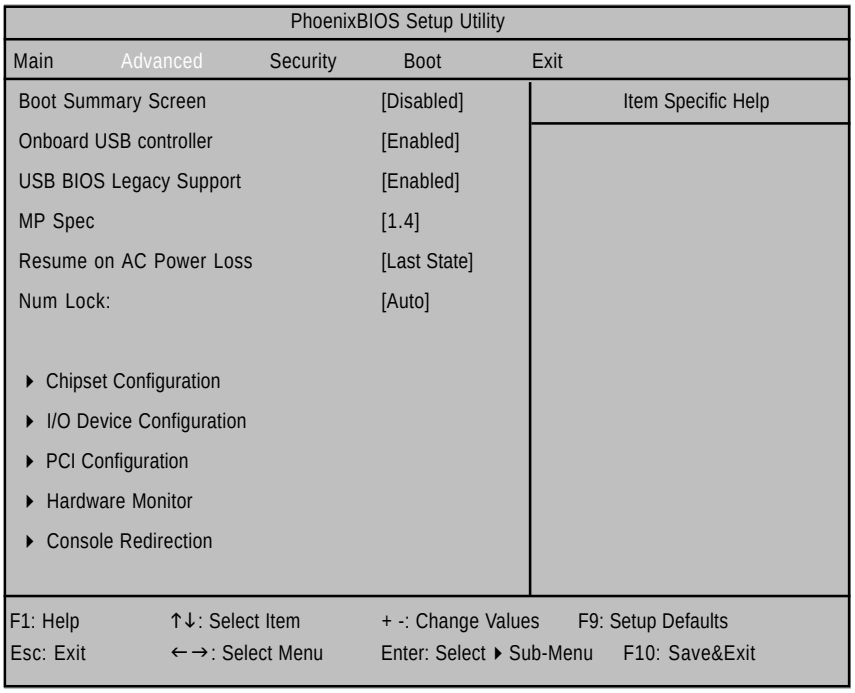


Figure 2: Advanced

Boot Summary Screen

This item displays the system configuration on boot.

- Enabled Set this item to enabled to displays the system configuration on boot. (Default values)
- Disabled Disable this function.

Onboard USB Controller

This option allows user to enable onboard USB controller. Note that disabled resources will be freed up or other users.

- Enabled Enable onboard USB controller. (Default values)
- Disabled Disable this function.

USB BIOS Legacy Support

This option allows user to function support for legacy USB.

- Enabled Enables support for legacy USB (Default values)
- Disabled Disables support for legacy USB

MP Spec

This option allows user to configure the multiprocessor(MP) specification revision level. Some operating system will require 1.1 for compatibility reasons.

- 1.4 Support MPS Version 1.4 . (Default values)
- 1.1 Support M PS Version 1.1.

Resume on AC Power Loss

This option provides user to set the mode of operation if an AC / power loss occurs.

- Power On — System power state when AC cord is re-plugged.
- Stay Off — Do not power on system when AC power is back.
- Last State — Set system to the last sate when AC power is removed. Do not power on system when AC power is back. (Default values)

NumLock

This option allows user to select power-on state for NumLock.

- Auto — System auto assign. (Default values)
- Enabled — Enable NumLock.
- Disabled — Disable this function.

Chipset Configuration

PhoenixBIOS Setup Utility			
Advanced			
Chipset Configuration			Item Specific Help
DRAM Bank Interleaves	[Auto]		
Node Memory Interleaves	[Disabled]		
ACPI SRAT Table	[Enabled]		
F1: Help	↑↓: Select Item	+ -: Change Values	F9: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▸ Sub-Menu	F10: Save&Exit

Figure 2-1: Chipset Configuration

DRAM Bank Interleaves

Interleaves memory blocks across dram chip selects. BIOS will auto detect capability on each node.

- Auto BIOS auto-detection. (Default values)
- Disabled Disabling DRAM bank interleaves function.

Node Memory Interleaves

Interleaves memory blocks across processor nodes. BIOS will auto detect capability of memory system.

- Auto BIOS auto-detection.
- Disabled Disabling Node memory interleaves function. (Default values)

ACPI SRAT Table

Enable or disable ACPI 2.0 Static Resources Affinity table for ccNUMA system.

- Enabled Enable ACPI SRAT Table. (Default values)
- Disabled Disable this function.

I/O Device Configuration

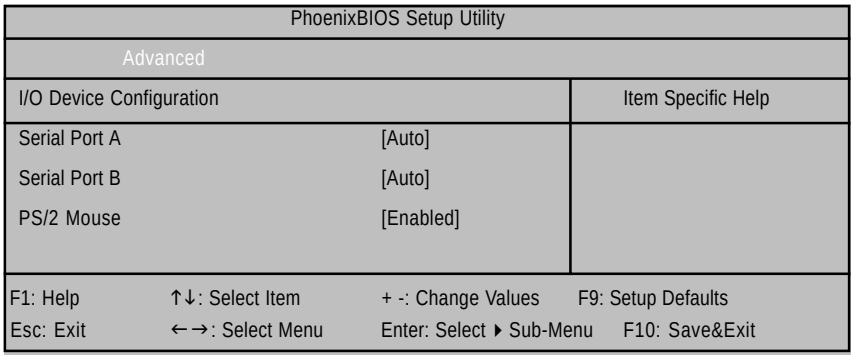


Figure 2-2: I/O Device Configuration

☞I/O Device Configuration

☞Serial Port A

This allows users to configure serial prot A by using this option.

- Disabled Disable the configuration.
- Enabled Enable the configuration
- Auto BIOS or O.S will select the configuration automatically. (Default values)

☞Serial Port B

This allows users to configure serial prot B by using this option.

- Disabled Disable the configuration.
- Enabled Enable the configuration
- Auto BIOS or O.S will select the configuration automatically. (Default values)

☞PS/2 Mouse

Set this option 'Enabled' to allow BIOS support for a PS/2 - type mouse.

- Enabled 'Enabled' forces the PS/2 mouse port to be enabled regardless if a mouse is present. (Default)
- Disabled 'Disabled' prevents any installed PS/2 mouse from functioning, but frees up IRQ12.

PCI Configuration

PhoenixBIOS Setup Utility			
Advanced			
PCI Configuration			Item Specific Help
82541 PXE Function		[Disabled]	
82545 PXE Function		[Enabled]	
F1: Help	↑↓: Select Item	+ -: Change Values	F9: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▸ Sub-Menu	F10: Save&Exit

Figure 2-3: PCI Configuration

82541 PXE Function

This option allows user to set the onboard LAN 82541GI PXE function.

- Enabled — Enable onboard LAN 82541GI PXE function.
- Disabled — Disable this function.(Default values)

82545 PXE Function

This option allows user to set the onboard LAN 82545GM PXE function.

- Enabled — Enable onboard LAN 82541GI PXE function. (Default values)
- Disabled — Disable this function.

Hardware Monitor

PhoenixBIOS Setup Utility			
Advanced			
Hardware Monitor			Item Specific Help
CPU0 Temperature		^{0}C /^{0}F	
CPU1 Temperature		^{0}C /^{0}F	
CPU0DIMM Temperature		^{0}C /^{0}F	
CPU1DIMM Temperature		^{0}C /^{0}F	
IDE Temperature		^{0}C /^{0}F	
CPU FAN 0		RPM	
CPU FAN 1		N/A	
System Fan 1		RPM	
Power Fan 1		RPM	
Power Fan 2		RPM	
VCORE1		1.190V	
VCORE2		1.190V	
VCC3.3V		3.502V	
+12V		12.41V	
+5V		4.958V	
VBAT		3.719V	
5V 5VSB		5.413V	
F1: Help	↑↓: Select Item	+ -: Change Values	F9: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▸ Sub-Menu	F10: Save&Exit

Figure 2-4: Hardware Monitor

☞ Hardware Monitor Configuration

All items on this menu cannot be modified in user mode. If any items requires changes, please consult your system supervisor.

▶ CPU 0 / 1 Temperature

This field only displlays the current CPU 0/1 temperature.

▶ CPU 0 / 1 DIMM Temperature

This field only displlays the current CPU 0/1 DIMM temperature.

▶ IDE Temperature

This field only displlays the current IDE temperature.

▶ CPU FAN 0 / 1 Speed

This field indicates the RPM (Ratio Per Minute) of current CPU 0/1 speed.

▶ System FAN 1 Speed

This field indicates the RPM (Ratio Per Minute) of current System 1 speed.

▶ Power FAN 1 / 2 Speed

This field indicates the RPM (Ratio Per Minute) of current Power 0/1 speed.

▶ Voltage: VCORE1 / VCORE2 / VCC 3.3V / +5V / +12V / VBAT / 5V 5VSB

▶▶ Detect system's voltage status automatically.

Console Redirection

PhoenixBIOS Setup Utility		
Advanced		
Console Redirection		Item Specific Help
Com Port Address	[Disabled]	
Console Connect	[Direct]	
Baud Rate	[19.2K]	
Flow Control	[CTS/RTS]	
Console Type	[ANSI]	
Continue C.R. after POST:	[Off]	
F1: Help ↑↓: Select Item + -: Change Values F9: Setup Defaults Esc: Exit ←→: Select Menu Enter: Select ▸ Sub-Menu F10: Save&Exit		

Figure 2-5: Console Redirection

Com Port Address

If this option is set to enabled, it will use a port on the motherboard.

- On-board COMA — Use COMA as he COM port address.
- Disabled — Disable this function. (Default values)

Console Connect

This field indicates whether the console is connected directly to the system or a modem is used to connect.

- Direct — Console is connected directly to the system. (Default values)
- Disabled — Console is connected via the modem.

Baud Rate

This option allows user to set the specified baud rate.

- Options — 300, 1200, 2400, 9600, 19.2K, 38.4K, 57.6K, 115.2K.

Flow Control

This option provide user to enable the flow control function.

- None — Not supported.
- XON/OFF — Software control.
- CTS/RTS — Hardware control.

Console Type

This option allows user to select the specified console type. This is defined by IEEE.

- Options — vt100, vt100 8bit, ANSI 7bit, ANSI, vt100 plus, UTF8.

Continue C.R. after POST

This option allows user to enable console redirection after O.S has loaded.

- On — Enable console redirection after O.S has loaded.
- Off — Disable this function. (Default values)

Security

About This Section: Security

In this section, user can set either supervisor or user passwords, or both for different level of password securities. In addition, user also can set the virus protection for boot sector.

PhoenixBIOS Setup Utility				
Main	Advanced	Security	Boot	Exit
Supervisor Password Is:			Clear	Item Specific Help
User Password Is:			Clear	
Set Supervisor Password			[Enter]	
Set User Password			[Enter]	
Password on boot			[Disabled]	
Fixed disk boot sector			[Normal]	
Diskette access			[Supervisor]	
F1: Help	↑↓: Select Item		+ -: Change Values	F9: Setup Defaults
Esc: Exit	←→: Select Menu		Enter: Select ▸ Sub-Menu	F10: Save&Exit

Figure 3: Security

Set Supervisor Password

You can install and change this options for the setup menus. Type the password up to 6 characters in lengh and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. You will be asked to confirm the entered password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a specified password or press <Enter> key to disable this option.

Set User Password

You can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password up to 6 characters in lengh and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. You will be asked to confirm the entered password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a specified password.

Password on boot

Password entering will be required when system on boot.

- Enabled — Requries entering password when system on boot.
- Disabled — Disable this function. (Default values)

Fixed disk boot sector

- Write Protect — Write protects boot sector on harddisk to protect against virus.
- Normal — Set the fixed disk boot sector at Normal state. (Default values)

Boot

About This Section: Boot

The "Boot" menu allows user to select among four possible types of boot devices listed using the up and down arrow keys. By applying <+> and <Space> key, you can promote devices and by using the <-> key, you can demote devices. Promotion or demotion of devices alerts the priority that the system uses to search for boot device on system power on.

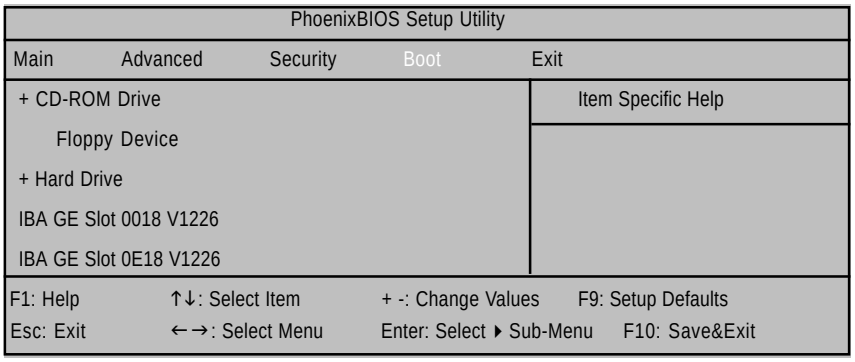


Figure 4: Boot

Boot Device Priority

- Removable Device / Hard Drive / CD-ROM Drive/ IBA GE Slot 0018V1217/ IBA GE Slot 0E18V1217

  These three fields determines which type of device the system attempt to boot from after PhoenixBIOS Post completed. Specifies the boot sequence from the available devices. If the first device is not a bootable device, the system will seek for next available device.

Exit

About This Section: Exit

Once you have changed all of the set values in the BIOS setup, you should save your chnages and exit BIOS setup program. Select "Exit" from the menu bar, to display the following sub-menu.

- Exit Saving Changes
- Exit Discarding Changes
- Load Settup Default
- Discard Change
- Save Changes

PhoenixBIOS Setup Utility				
Main	Advanced	Security	Boot	Exit
Exit Saving Changes				Item Specific Help
Exit Discarding Changes				
Load Settup Default				
Discard Changes				
Save Changes				
F1: Help	↑↓: Select Item		+ -: Change Values	F9: Setup Defaults
Esc: Exit	←→: Select Menu		Enter: Select ▸ Sub-Menu	F10: Save&Exit

Figure 5: Exit

Exit Saving Changes

This option allows user to exit system setup with saving the changes.

Press <Enter> on this item to ask for the following confirmation message:

Pressing 'Y' to store all the present setting values tha user made in this time into CMOS.

Therefore, whenyou boot up your computer next time, the BIOS will

re-configure your system according data in CMOS.

Exit Discarding Changes

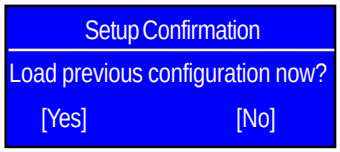
This option allows user to exit system setup without changing any previous settings values in CMOS. The previous selection remain in effect.

This will exit the Setup Utility and restart your compuetr when selecting this option.

Load Settup Default

This option allows user to load default values for all setup items.

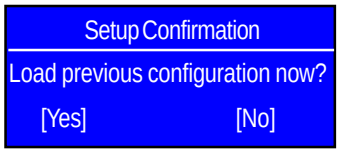
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



Discard Changes

This option allows user to load previos values from CMOS for all setup item.

When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:

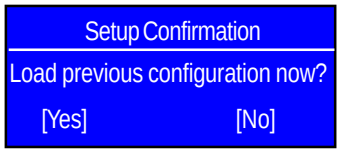


Press [Yes] to load the previos values from CMOS for all setup item.

Save Changes

This option allows user to save setup daya to CMOS.

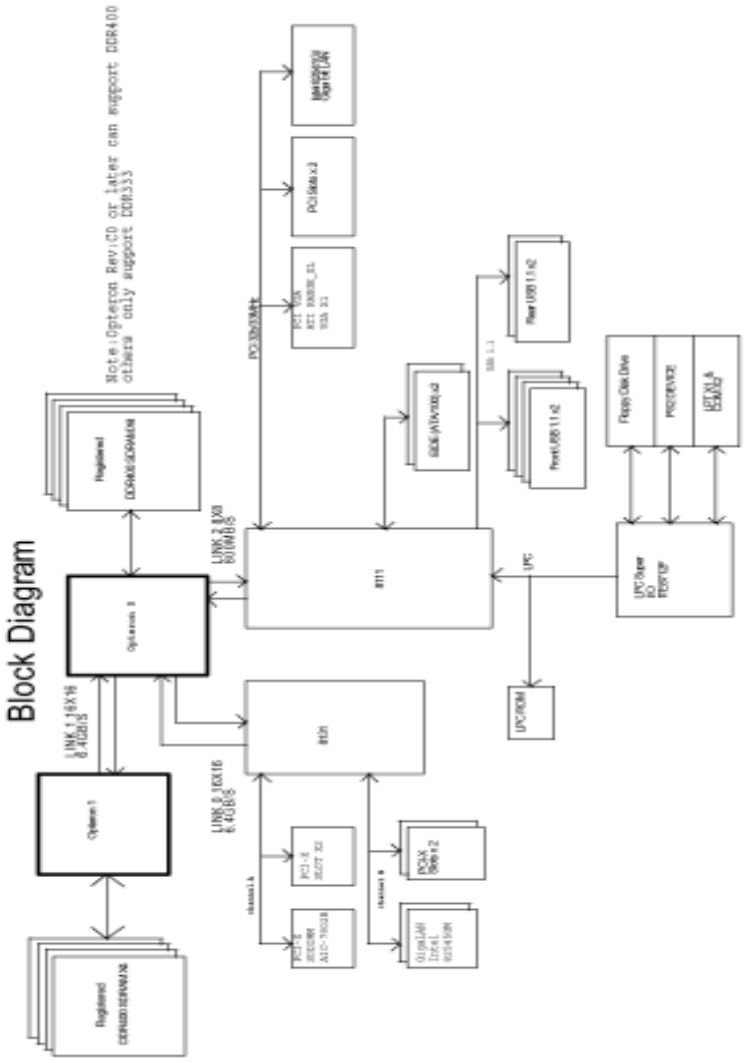
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



Press [Yes] to save setup daya to CMOS.

Chapter 4 Technical Reference

Block Diagram



Chapter 5 Application Driver Installation

A. Intel Network Driver Installation

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

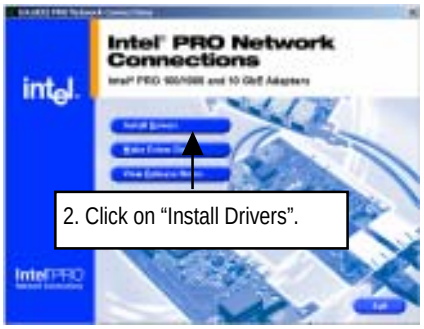
Installation Procedures:

1. The CD auto run program starts, **Double click** on “ntel 82545GM and 82541GI LAN Driver” to start the installation.
2. Click “Install Drivers”.
3. system installs the driver automatically. Installation completed.

Auto Run window

(1)

Install Drivers



(2)

(3)

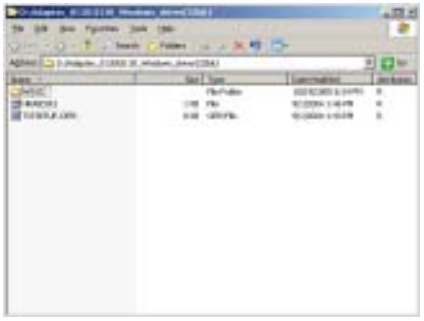
B. Adaptec 8130 HostRaid Driver Installation

Installation Procedures:

1. The CD auto run program starts, **Double click** on "Adaptec 8130 HostRaid Driver for Windows (32bit)".
2. Copy all files to the floppy disk.
3. Reboot the system.
4. Insert the floppy disk and press **F6** when system boot.

Auto Run window

(1)



(2)

Copy files

(3)

C. Adaptec Storage Manager Software Installation

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

Installation Procedures:

1. The CD auto run program starts, **Double click** on "Adaptec Storage Manager (32bit)" to start the installation.
2. Select preferred language. Then, a series of installation wizards appear. Follow up the wizards to install the drivers.
3. Setup completed, click "Finish" to restart your computer.

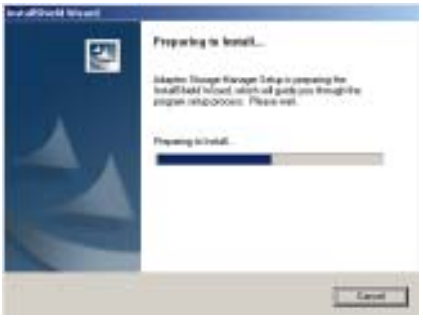
Auto Run windows

(1)

Select Preferred Language

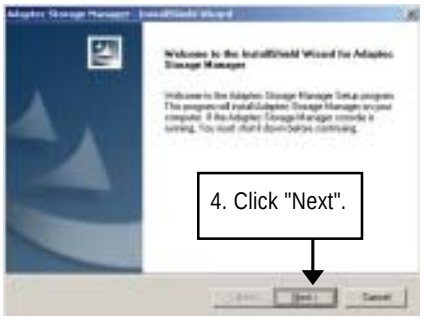
(2)

Preparing to install



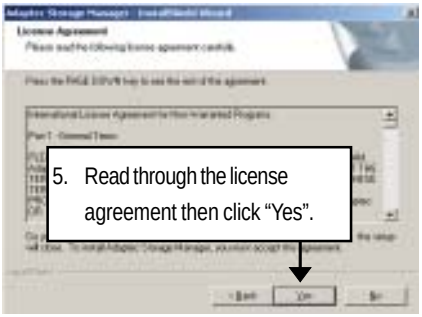
(3)

Install Shield Wizard



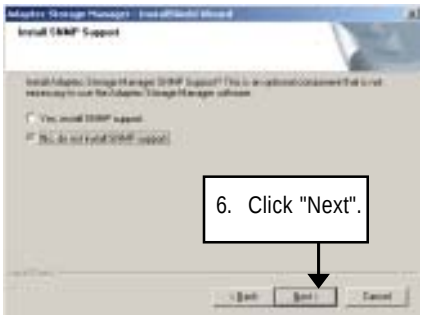
(4)

License Agreement



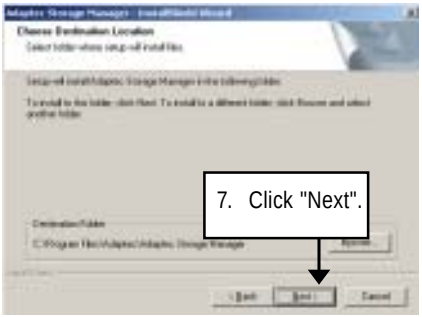
(5)

Install SNMP Install



(6)

Choose Destination Location

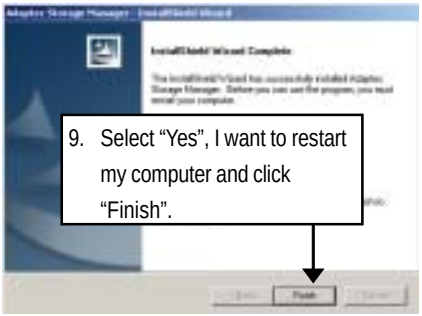


(7)

Install Wizard Completed

(8)

Installation Completed



(9)

D. DirectX 9.0 Driver Installation

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

Installation Procedures:

1. The CD auto run program starts, **Double click** on "Directx9.0" to start the installation.
2. Then, a series of installation wizards appear. Follow up the wizards to install the drivers.
3. Setup completed, click "Finish" to restart your computer.

Auto Run window

(1)

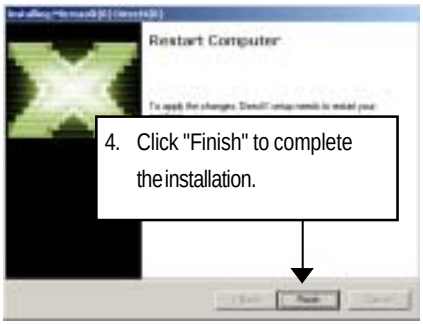
License Agreement

(2)

Starting Installaiton

(3)

Installaiton Wizard completed



(4)

Chapter 6 Appendix

Appendix : Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Advanced Communications Riser
BBS	BIOS Boot Specification
BIOS	Basic Input / Output System
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRM	Dual Retention Mechanism
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Checking and Correcting
EMC	Electromagnetic Compatibility
EPP	Enhanced Parallel Port
ESD	Electrostatic Discharge
FDD	Floppy Disk Device
FSB	Front Side Bus
HDD	Hard Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt Request

Acronyms	Meaning
I/O	Input / Output
IOAPIC	Input Output Advanced Programmable Input Controller
ISA	Industry Standard Architecture
LAN	Local Area Network
LBA	Logical Block Addressing
LED	Light Emitting Diode
MHz	Megahertz
MIDI	Musical Instrument Digital Interface
MTH	Memory Translator Hub
MPT	Memory Protocol Translator
NIC	Network Interface Card
OS	Operating System
OEM	Original Equipment Manufacturer
PAC	PCI A.G.P. Controller
POST	Power-On Self Test
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
SCI	Special Circumstance Instructions
SECC	Single Edge Contact Cartridge
SRAM	Static Random Access Memory
SMP	Symmetric Multi-Processing
SMI	System Management Interrupt
USB	Universal Serial Bus
VID	Voltage ID